IN THE CLAIMS

Please enter claims 1, 3, 8-10, 106, and 107 as re-written below.

1. (Currently amended) A method for isolating a polypeptide of interest comprising[;] :

a) contacting a modified Fluorescein arsenical helix binder (FlAsH) compound, or a tautomer, anhydride or salt thereof, wherein said FlAsH compound, or a tautomer, anhydride or salt thereof, ~~which~~ has been modified by acylation with an amino acid, ~~or a tautomer, anhydride or salt of said modified FlAsH compound,~~ and immobilized on a solid support, with a solution containing a polypeptide of interest, which has been modified to contain a FlAsH target sequence motif, under conditions that allow binding of the polypeptide to the immobilized FlAsH compound; and

b) eluting the polypeptide of interest from the immobilized FlAsH compound.

2. (Canceled)

3. (Currently amended) The method of claim ~~2~~ 1, wherein the modification is by acylation with β-Alanine.

4. (Previously amended) The method of claim 1, wherein the polypeptide of interest has been modified by the addition of the FlAsH target sequence motif C-C-X_1-X_2-C-C (SEQ ID NO:1), where X_1 and X_2 are any amino acid.

5. (Original) The method of claim 4 wherein X_1 and X_2 are the same amino acid.

6. (Original) The method of claim 4 wherein X_1 and X_2 are different amino acids.

7. (Original) The method of claim 4 wherein the sequence motif has been added at either the N terminus or C terminus of the polypeptide, or in an alpha-helical region of the polypeptide.

8. (Currently amended) The method of claim 1, wherein said solid support is selected from the group consisting of agarose, ~~polyacrylimide~~ polyacrylamide, glass, ceramics, natural or synthetic polymeric materials, beads, ~~coverslips~~ cover slips, paper, metals, metalloids, ~~polacryloylmorpholide,~~ polyacryloylmorpholide, polyamide, poly(tetrafluoroethylene), polyethylene, polypropylene, poly(4-methylbutene), ~~polystyrene,~~ polystyrene, polystyrene/latex, polymethacrylate, poly(ethylene terephthalate), rayon, nylon, poly(vinyl butyrate), polyvinylidene difluoride (PVDF), silicones, polyformaldehyde, cellulose, cellulose acetate, nitrocellulose, and controlled-pore glass, aerogels, and affinity exchange resins.

9. (Currently amended) The method of claim 1, wherein the polypeptide of interest is eluted from the immobilized FlAsH compound using a dithiol solution.

10. (Currently amended) The method of claim 9, where the dithiol solution is selected from the group consisting of 1,2 Ethanedithiol (EDT), ~~Dithiotheritol~~ dithiothreitol (DTT), ~~2,3~~ and 2,3-Dimercaptopropanesulfonate (DMPS).

11. (Original) The method of claim 1, wherein said solution which contains the polypeptide of interest is selected from the group consisting of cell lysate, crude polypeptide extract, and partially purified polypeptide extract.

12. (Original) The method of claim 11, wherein said solution is obtained from a cell or cell free solution derived from the group consisting of a plant, a prokaryote, and a eukaryote.

13-103. (Canceled)

104. (Previously added) The method of claim 1, wherein the modified FlAsH compound comprises 4'5'-bis(1,2,3-dithioarsolan-2yl)5-((5-aminoethyl)aminocarbonyl-fluorescein.

105. (Previously added) The method of claim 1, wherein the modified FlAsH compound is immobilized on a solid support by reaction with an N-hydroxysuccinamide (NHS) functionalized solid support.

106. (Currently amended) The method of claim 1, wherein the modified FlAsH compound has been modified at a primary amine of a 5 position of flourescein, by acylation with an amino acid[,].

107. (Currently amended) A method for isolating a polypeptide of interest comprising;

a) contacting a modified Fluorescein arsenical helix binder (FlAsH) compound, or a tautomer, anhydride or salt thereof, wherein said (FlAsH) compound, or a tautomer, anhydride or salt thereof, ~~which~~ has been modified by acylation with an amino acid, ~~or a tautomer, anhydride or salt of said modified FlAsH compound,~~ and immobilized on a solid support, with a solution containing a polypeptide of interest, which has been modified to contain a FlAsH target sequence motif, under conditions that allow binding of the polypeptide to the immobilized FlAsH compound, wherein the solid support is selected from the group consisting of agarose, ~~polyacrylimide~~ polyacrylamide, glass, ceramics, natural or synthetic polymeric materials, beads, ~~coverslips~~ cover slips, paper, metals, metalloids, ~~polacryloylmorpholide,~~ polyacryloylmorpholide, polyamide, poly(tetrafluoroethylene), polyethylene, polypropylene, poly(4-methylbutene), polystyrene, ~~polystyrene,~~ polystyrene/latex, polymethacrylate, poly(ethylene terephthalate), rayon, nylon, poly(vinyl butyrate), polyvinylidene difluoride

(PVDF), silicones, polyformaldehyde, cellulose, cellulose acetate, nitrocellulose, and controlled-pore glass, aerogels, and affinity exchange resins; and

b) eluting the polypeptide of interest from the immobilized FlAsH compound.

108. (Previously added) The method of claim 107, wherein the modification is by acylation with β-alanine.

109. (Previously added) The method of claim 107, wherein the modified FlAsH compound is immobilized on a solid support by reaction with an N-hydroxysuccinamide (NHS) functionalized solid support.

110. (Previously added) The method of claim 109, wherein the NHS functionalized solid support comprises NHS functionalized agarose beads.

111. (Previously added) The method of claim 107, wherein the modified FlAsH compound comprises 4'5'-bis(1,2,3-dithioarsolan-2yl)5-((5-aminoethyl)aminocarbonyl-fluorescein.

REMARKS

Claims 1, 3, 8-10, 106, and 107 have been amended to define Applicants' invention with greater particularity. As amended, the claims are supported by the specification and the original claims and add no new matter. Thus, entry of the amendments are respectfully requested. Claims 1, 3-12, and 104-111 are pending.

A. Regarding the Claim Objections

The objections to claims 1, 3, 8, 9, 106, and 107 have been addressed as follows. Claim 1 has been amended so that the word "comprising" is now followed by a colon rather than a semicolon. Claim 3 has been amended to depend from claim 1, rather than cancelled claim 2. Claims 8 and 107 have been amended to correct the spelling of "polyacrylamide" and to delete duplicate reference to "polystyrene". Further with respect to claims 8 and 107, the Examiner asserts that "polystyrene" is recited three times in these claims. Applicants note, however, that "polystyrene" is recited only twice, therefore the present amendment deletes the second recitation of "polystyrene". Finally with respect to claims 8 and 107, these claims have been amended to correct the spellingof "polyacyloylmorpholide". Claim 9 has been amended to include a period at the end of the claim. Finally, claim 106 has been amended to delete an inadvertent comma appearing at the end of the claim. Accordingly, reconsideration and withdrawal of the objections to claims 1, 3, 8, 9, 106, and 107 are respectfully requested.

B. Rejections Under 35 U.S.C. § 102(a) and § 102(b)

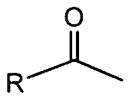
The rejections of claims 1, 4-7, and 9-12 under 35 U.S.C. § 102(a), as allegedly being anticipated by Tsien, et. al. (U.S. Patent No. 6,008,378), and under 35 U.S.C. § 102(b), as allegedly being anticipated by Griffin, et. al. (Science, Vol. 281, p. 269-272, July 10, 1998), are respectfully traversed. Applicants' invention, as defined for example, by claim 1, distinguishes over the cited references by requiring a method for isolating a polypeptide of interest comprising:

a) contacting a modified Fluorescein arsenical helix binder (FlAsH) compound, or a tautomer, anhydride or salt thereof, wherein said FlAsH compound, or a tautomer, anhydride or salt thereof has been modified by acylation with an amino acid and immobilized on a solid support, with a solution containing a polypeptide of interest, which has been modified to contain a FlAsH target sequence motif, under conditions that allow binding of the polypeptide to the immobilized FlAsH compound; and

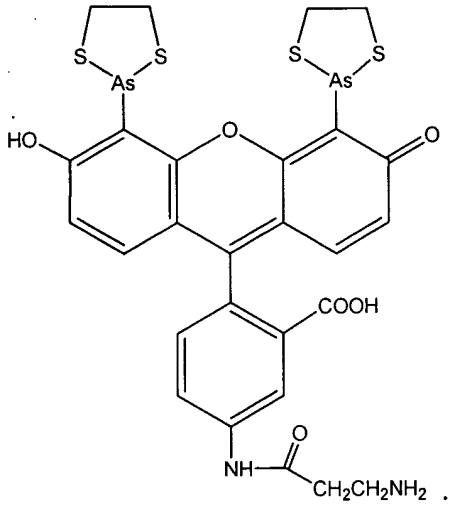
b) eluting the polypeptide of interest from the immobilized FlAsH compound.

In applying the cited references as the basis for the anticipation rejections, it is respectfully submitted that the Examiner has misconstrued the invention. For example, the Examiner asserts that both the cited references and the present invention recite "acylation via an anhydride, tautomer or salt" (see Office Action mailed April 22, 2003, page 5, lines 11-16). However, it is respectfully submitted that neither the cited reference nor the present invention, as defined by claim 1, recite a method employing a FlAsH compound which has been modified by acylation with an anhydride, tautomer, or salt. Instead, FlAsH compounds employed in invention methods have been modified by acylation with an amino acid.

Acylation involves the addition of the following moiety:



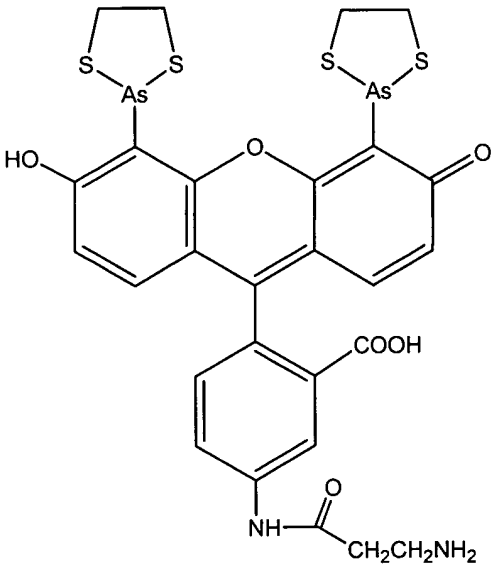
to a suitable functional group. Invention methods employ fluorescein arsenical helix binder (FlAsH) compounds that have been modified by acylation with an amino acid. An example of such a compound is set forth in the specification at the bottom of Figure 1, and is reproduced below explicitly showing the carbonyl moiety of the acyl group:

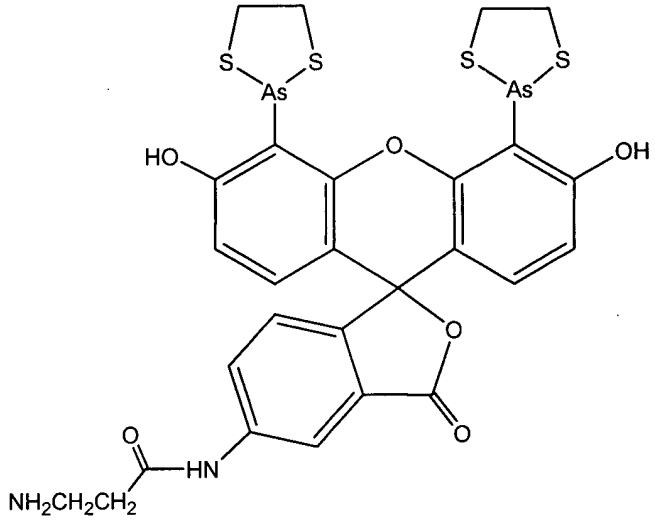


In this structure, it is understood that an amino group at the 5-position of the fluorescein has been modified by acylation with an amino acid, wherein "R" of the acyl moiety is $-CH_2CH_2NH_2$. Those skilled in the art recognize that it is this type of acylation that is set forth in claim 1, and not acylation with an anhydride, tautomer or salt.

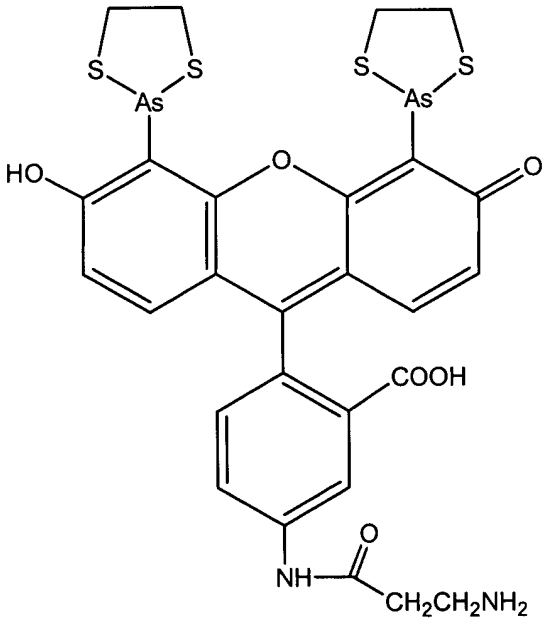
Rather than reciting acylation with a tautomer, anhydride or salt (as asserted by the Examiner), claim 1 recites "...a FlAsH compound or a tautomer, anhydride or salt thereof...". Thus, those skilled in the art recognize that the tautomer, anhydride or salt set forth in claim 1 are simply alternate forms of the modified FlAsH compounds employed in invention methods (wherein the modification is acylation of the amino group at the 5-position of fluorescein with an amino acid), not alternate acylation methods. For the Examiner's convenience, examples of tautomers, anhydrides, and salts of FlAsH compounds are set forth below:

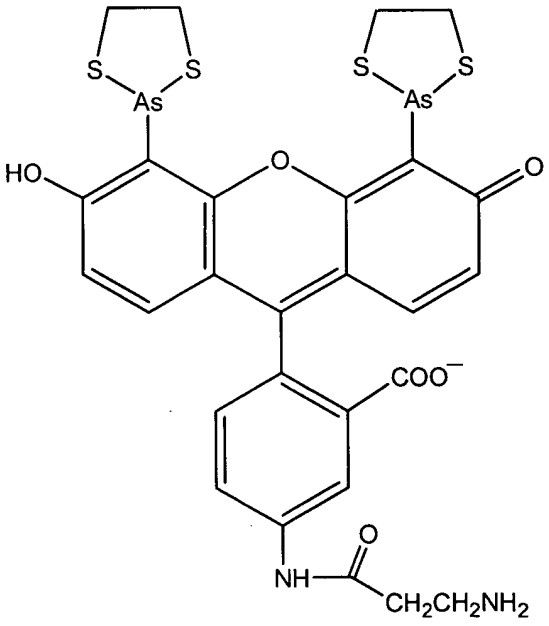
Tautomers



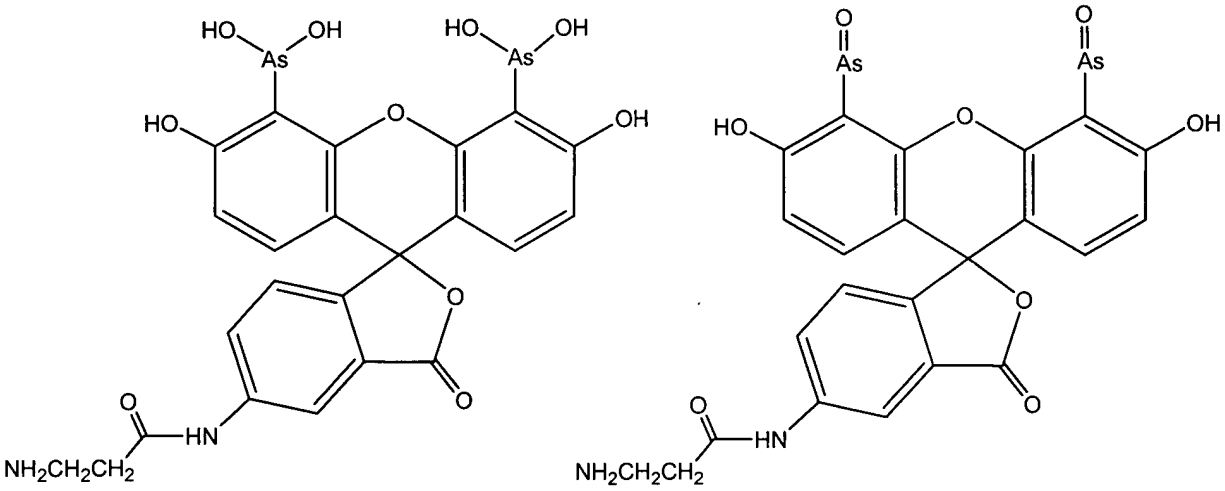


Salts





Anhydrides



Further in response to the Advisory Action, it is submitted that the present amendments to claims 1 and 107 plainly convey to those skilled in the art that the present methods employ FlAsH compounds, or tautomers, anhydrides, or salts thereof, which have been modified with an amino acid. Thus, it is submitted that the present invention distinguishes over the cited references by requiring methods employing FlAsH compounds which have been modified by acylation with an amino acid. Accordingly, reconsideration and withdrawal of the rejections of claims 1, 4-7, and 9-12 under 35 U.S.C. § 102(a) and 35 U.S.C. § 102(b) are respectfully requested.

CONCLUSION

In view of the above amendments and remarks, reconsideration and favorable action on all claims are respectfully requested. In the event any matters remain to be resolved, the Examiner is requested to contact the undersigned at the telephone number given below so that a prompt disposition of this application can be achieved.

Respectfully submitted,

Date: 10/21/03

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